

**REMARKS*****Summary of the Amendment***

Upon entry of the above amendment, claims 1, 4, 11, and 18 will have been amended and new claim 24 will have been entered for consideration by the Examiner. Accordingly, claims 1 – 24 are currently pending.

***Summary of the Official Action***

In the instant Office Action, the Examiner has objected to 1 based on an informality, rejected claims 11, 13, and 18 based upon formal matters, and rejected claims 1 – 23 over the applied art of record. By the present amendment and remarks, Applicants submit that the objections and rejections have been overcome, and respectfully request reconsideration of the outstanding Office Action and allowance of the present application.

***Objection to the Claims is Moot***

By the present amendment, Applicants submit that the objection to claim 1 as containing informalities is now moot. In particular, proper antecedent basis has been presented for all elements recited in the pending claims.

Accordingly, reconsider and withdrawal of the objection is respectfully requested.

***Traversal of Rejection Under 35 U.S.C. § 112, Second Paragraph***

Applicants traverse the formal rejection of claims 11, 13, and 18 under 35 U.S.C. § 112, second paragraph, as being indefinite.

In particular, as noted above, each element has been provided with proper antecedent basis in the pending claims. Thus, Applicants submit that the formal rejection of claim 11 is now moot.

With regard to claim 13, Applicants note that this language recited in the claim, i.e., at least one of bars, pins, screws, and rivets, is common patent parlance for the phrase "bars, pins, screws, and/or rivets," thereby denoting that embodiments of the invention include at least one of the listed elements, but can also include all of the elements or a combination thereof. Of course, if the Examiner would prefer the claim amended to recite "and/or," Applicants would not object to such a revision in the claims.

By the present amendment, claim 18 has been amended to clarify the arrangement noted by the Examiner. Support for this amendment can be found in original disclosure in the second full paragraph on page 6. Accordingly, Applicants submit that the pending rejection is now moot.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdrawal of the formal rejection of claims 11, 13, and 18 under 35 U.S.C. § 112, second paragraph, and indicate that these claims, as well as the other pending claims, are fully in compliance with the statute.

***Traversal of Rejection Under 35 U.S.C. § 102(b)***

Applicants traverse the rejection of claims 1, 2, 5, 6, 8, 10 – 16, and 19 – 23 under 35 U.S.C. § 102(b) as being anticipated by AKIYOSHI et al. (U.S. Patent No. 5,887,644) [hereinafter "AKIYOSHI"]. The Examiner refers to Figs. 1 and 2 in asserting that AKIYOSHI shows all recited elements of the above-noted claims. In particular, the Examiner asserts that that AKIYOSHI shows an inner sleeve 19 and an outer sleeve 20, between which a hollow space is formed into which a fluid can be introduced. Applicants submit that AKIYOSHI fails to anticipate the claimed embodiments.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See *The Manual of Patent Examining Procedure* [hereinafter "MPEP"] § 2131. Applicants submit that the applied art does not show each and every element of the claimed invention.

Applicants' independent claim 1 recites, *inter alia*, a cylinder sleeve having at least one inner sleeve layer and one outer sleeve layer, such that the at least one inner sleeve layer and one outer sleeve layer are separated from each other by a hollow space into which a hot fluid is introduced. Further, Applicants' independent claim 19, as currently amended, recites, *inter alia*, one outer cylinder sleeve, a hot fluid introduced into the one outer cylinder sleeve to flow along an inner surface of the one outer cylinder sleeve; and struts located inside the heated cylinder that are arranged to support the outer cylinder sleeve. Applicants submit that the applied art of record fails to anticipate the above-recited embodiments.

Applicants note that, in contrast to the expressly recited features of the pending claims, AKIYOSHI discloses a roller in which cooling water flows is introduced to the roller in order to remove heat from the outer sleeve. Thus, rather than a heated roll, as recited in Applicants' claims, AKIYOSHI discloses a cooling roll that is specially designed to withdraw or remove heat from cast metal strips that contact the outer surface of the cooling roll. In contrast, the embodiments of the pending claims are directed to a heated roll that transfers heat from the roll to an external element, such as a fiber web.

Accordingly, Applicants submit that the roll of AKIYOSHI and embodiments of the roll recited in at least independent claims 1 and 19 are wholly distinct. In particular, independent claim 1 recites hollow space into which a hot fluid is introduced, and independent claim 19

recites a *hot fluid* introduced into the one outer cylinder sleeve to flow along an inner surface of the one outer cylinder sleeve. In contrast, Applicants note that AKIYOSHI discloses a roll into which *cool* water is introduced and circulated along the inner surface of the roll. Still further, while the cool water of AKIYOSHI is heated as it removes heat from the external metal casting, AKIYOSHI discloses only introducing cool water for the purpose of cooling an externally located cast metal strip. Moreover, as this distinction between AKIYOSHI and claimed embodiments results in rolls operating in manners wholly distinct from each other, Applicants submit that AKIYOSHI fails to anticipate the embodiments of at least amended independent claims 1 and 19.

As AKIYOSHI fails to expressly or impliedly disclose introducing a hot fluid into a space adjacent an inner surface of an outer sleeve, Applicants submit that this document fails to show each and every recited elements of the pending claims. Thus, Applicants submit that AKIYOSHI fails to provide an adequate evidentiary basis to support a rejection of anticipation under 35 U.S.C. § 102(b), such that the pending rejection is improper and should be withdrawn.

Further, Applicants submit that claims 2, 5, 6, 8, 10 – 16, and 20 – 23 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further defines embodiments of the present invention. In particular, Applicants submit that AKIYOSHI fails to anticipate the embodiments of claims 2, 5, 6, 8, 10 – 16, and 20 – 23 under 35 U.S.C. § 102(b), such that pending rejections are improper and should be withdrawn.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims 1, 2, 5, 6, 8, 10 – 16, and 19 – 23 under 35 U.S.C. § 102(b) and indicate that these claims are allowable in the next official communication to the undersigned.

*Traversal of Rejection Under 35 U.S.C. § 103(a)*

*I. Over Akiyoshi*

Applicants traverse the rejection of claims 3, 4, 7, and 9 under 35 U.S.C. § 103(a) as being unpatentable over AKIYOSHI. The Examiner asserts that the features of the above-noted claims would have been obvious in view of the disclosure of AKIYOSHI. Applicants traverse the Examiner's assertions.

With regard to the pending rejection of the claims under 35 U.S.C. § 103(a), Applicants note the Examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the Examiner does not produce a *prima facie* case, Applicants are under no obligation to submit evidence of non-obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met:

- (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
- (2) there must be a reasonable expectation of success; and
- (3) the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP §2142.

Further, while rejecting a *rigid* application of the teaching, suggestion, or motivation ("TSM") test in an obviousness inquiry, the U.S. Supreme Court acknowledged the importance of identifying "a reason that would have prompted a person of ordinary skill in the relevant field

to combine the elements in the way the claimed new invention does” in an obviousness determination. *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356-1357 (Fed. Cir. 2007) (quoting *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1731 (2007)).

As noted above, the roll of AKIYOSHI and the embodiments recited in the pending claims are directed to wholly distinct subject matter. In particular, while both the pending claims and AKIYOSHI are directed to rolls, the rolls described by AKIYOSHI are structured for a purpose and use contrary to the heated rolls of the pending claims. That is, AKIYOSHI is directed to a cooling roller structure in which cooling water flows is introduced to the roller in order to remove heat from the outer sleeve. Thus, it is apparent that AKIYOSHI is designed and structured to draw heat from a device or element external to the cooling roll, i.e., heat in the cast metal strip, into the interior of the cooling roller.

Thus, Applicants submit that, not only does AKIYOSHI fail to provide any express or implied teaching of introducing a hot fluid adjacent to an inner surface of an outer cylinder, the applied art teaches the opposite, i.e., introducing cooling water. As a result of these differences, Applicants note that the two rolls operate in wholly distinct and opposite manners, since the hot fluid introduced into the outer cylinder according to the claimed embodiments, results in a roller for transferring heat from inside of the roller to a device or element external to the roller, i.e., a fiber web.

Because AKIYOSHI is expressly structured to operate to draw heat inward, Applicants submit that this document fails to provide any arguable teaching or suggestion for intruding hot fluid into the hollow space, as recited in at least amended independent claim 1. Further, as the roll described by the applied art document is intended for operation in a manner opposite the

intended operation of the claimed embodiments, Applicants submit that there is no articulated reasoning for modifying AKIYOSHI in any manner that would render obvious to claimed embodiments.

Thus, Applicants submit that no proper modification of AKIYOSHI under 35 U.S.C. § 103(a) can render obvious the combination of features recited in at least independent claim 1, such that the pending rejection is improper and should be withdrawn.

Further, Applicants submit that claims 3, 4, 7, and 9 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further defines embodiments of the present invention. In particular, Applicants submit that no proper modification of AKIYOSHI under 35 U.S.C. § 103(a) can render obvious the embodiments of claims 3, 4, 7, and 9 under 35 U.S.C. § 103(a), such that pending rejections are improper and should be withdrawn.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims 3, 4, 7, and 9 under 35 U.S.C. § 103(a) and indicate that these claims are allowable in the next official communication to the undersigned.

2. Over Akiyoshi in view of Hollingsworth

Applicants traverse the rejection of claim 17 under 35 U.S.C. § 103(a) as being unpatentable over AKIYOSHI in view of HOLLINGSWORTH (U.S. Patent No. 5,920,961). The Examiner asserts it would have been obvious to modify AKIYOSHI to include features of the disclosure of HOLLINGSWORTH. Applicants traverse the Examiner's assertions.

As noted above, the roll of AKIYOSHI is directed to a cooling roller structure in which cooling water flows is introduced to the roller in order to remove heat from the outer sleeve. In contrast, HOLLINGSWORTH is directed to a cylinder within which fibers are worked, which

generates heat. To avoid problems such as fire, the cylinder of HOLLINGSWORTH is designed to dissipate heat radially outward. However, like AKIYOSHI, Applicants note that HOLLINGSWORTH fails to expressly or implied teach introducing a hot fluid into a hollow space, such that no proper combination of these documents under 35 U.S.C. § 103(a) can render obvious to the combination of features of the embodiments of claim 1.

Further, as AKIYOSHI is specially designed to draw heat from the exterior of the roller into the interior of cylinder, and as HOLLINGSWORTH is specially designed to dissipate heat generated within the cylinder to outside of the cylinder, Applicants submit that the cylinders in the applied art operate in completely opposite manners. Moreover, the Examiner has identified no articulated reasoning in the applied art of record as to why or how it would have been obvious to one ordinarily skilled in the art to modify AKIYOSHI according to a teaching by HOLLINGSWORTH directed to a cylinder that operates in a wholly distinct manner from AKIYOSHI.

Thus, Applicants submit that no proper combination of the applied art of AKIYOSHI and HOLLINGSWORTH under 35 U.S.C. § 103(a) can render obvious the combination of features recited in at least amended independent claim 1.

Further, Applicants submit that claim 17 is allowable at least for the reason that it depends from an allowable base claim and because it recites additional features that further defines embodiments of the present invention. In particular, Applicants submit that no proper combination of AKIYOSHI in view of HOLLINGSWORTH can render obvious the embodiments of claim 17 under 35 U.S.C. § 103(a), such that pending rejections are improper and should be withdrawn.



Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claim 17 under 35 U.S.C. § 103(a) and indicate that these claims are allowable in the next official communication to the undersigned.

3. Over Akiyoshi in view of Watson

Applicants traverse the rejection of claim 18 under 35 U.S.C. § 103(a) as being unpatentable over AKIYOSHI in view of WATSON (U.S. Patent No. 5,983,993). The Examiner asserts it would have been obvious to modify AKIYOSHI to include a smaller rib surface at the circumferential end near the end faces, as purportedly shown by WATSON. Applicants traverse the Examiner's assertions.

As noted above, the roll of AKIYOSHI is directed to a cooling roller structure in which cooling water flows is introduced to the roller in order to remove heat from the outer sleeve. While Applicants acknowledge that WATSON is arguably directed to the subject matter of AKIYOSHI, i.e., WATSON disclose a device for cooling a fibrous web, Applicants note that neither applied document is directed to the subject matter recited in at least Applicants' amended independent claim 1.

Accordingly, as neither applied document expressly or impliedly teach introducing a hot fluid into a hollow space, Applicants submit that no proper combination of these documents under 35 U.S.C. § 103(a) can render obvious to the combination of features of the embodiments of claim 1.

Further, as both AKIYOSHI and WATSON are specially designed to draw heat from the exterior of the roller into the interior of cylinder, Applicants submit that such cylinders would not suggest to one ordinarily skilled in the art the subject matter of at least independent claim 1. Thus, Applicants submit that no proper combination of the applied art of AKIYOSHI and

WATSON under 35 U.S.C. § 103(a) can render obvious the combination of features recited in at least amended independent claim 1.

Further, Applicants submit that claim 18 is allowable at least for the reason that it depends from an allowable base claim and because it recites additional features that further defines embodiments of the present invention. In particular, Applicants submit that no proper combination of AKIYOSHI in view of WATSON can render obvious the embodiments of claim 18 under 35 U.S.C. § 103(a), such that pending rejections are improper and should be withdrawn.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claim 18 under 35 U.S.C. § 103(a) and indicate that these claims are allowable in the next official communication to the undersigned.

*Application is Allowable*

Thus, Applicants respectfully submit that each and every pending claim of the present invention meets the requirements for patentability under 35 U.S.C. §§ 102 and 103, and respectfully request the Examiner to indicate allowance of each and every pending claim of the present invention.

*Authorization to Charge Deposit Account*

If for any reason a check including the amount for any necessary fees is not associated with this file, the undersigned authorizes the charging of the amounts identified herein for the missing check, as well as any necessary fees not explicitly identified, including any extensions of time fees required to place the application in condition for allowance by Examiner's Amendment, to Deposit Account No. 19 - 0089 in order to maintain pendency of this application.

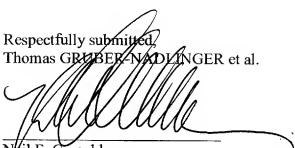
**CONCLUSION**

In view of the foregoing, it is submitted that none of the references of record, either taken alone or in any proper combination thereof, anticipate or render obvious the Applicants' invention, as recited in each of claims 1 - 23. The claims have been amended to eliminate any arguable basis for rejection under 35 U.S.C. § 112. In addition, the applied references of record have been discussed and distinguished, while significant claimed features of the present invention have been pointed out.

Further, any amendments to the claims which have been made in this response and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Accordingly, reconsideration of the outstanding Office Action and allowance of the present application and all the claims therein are respectfully requested and now believed to be appropriate.

Respectfully submitted,  
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